

# PROGRAM FOR ARTERIAL SYSTEM SYNCHRONIZATION (PASS) FY13/14 CYCLE

# City of Walnut Creek Signal Timing Project

City of Walnut Creek | Caltrans | Metropolitan Transportation Commission

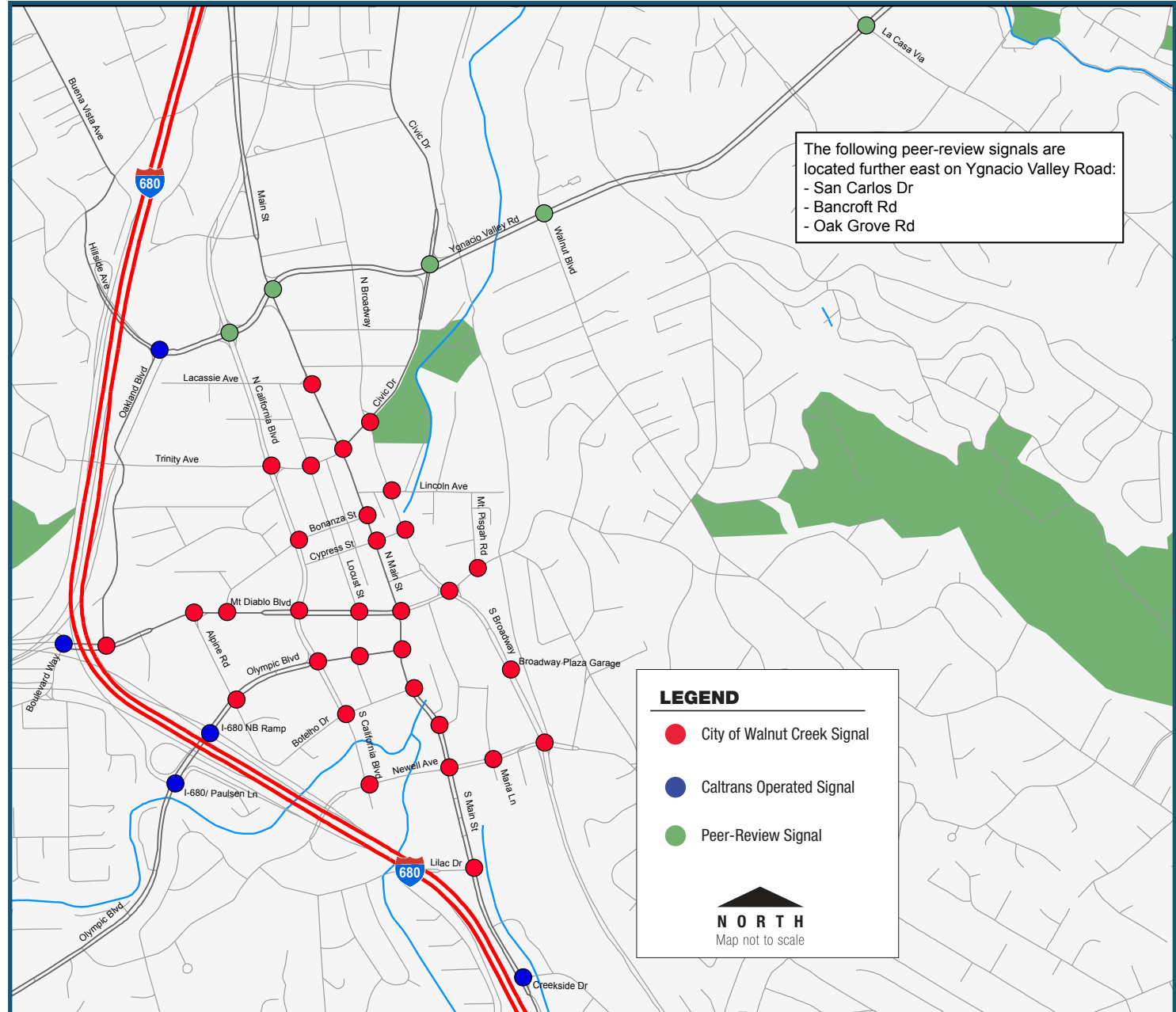
## PROJECT OVERVIEW

The City of Walnut Creek received a grant from the Metropolitan Transportation Commission's Program for Arterial System Synchronization (PASS) to conduct a signal timing study for the 44 traffic signals along various corridors in the City. Thirty-nine of the project intersections are owned and operated by the City of Walnut Creek and the remaining five signals are owned by Caltrans, but operated and maintained the City.

The goal of the project was to conduct a timing analysis, and to develop and implement signal coordination plans during typical weekends for the 35 project signals in and around the Downtown area. In addition to implementation of timing plans on typical weekends, the project included implementing special signal coordination plans to operate during the heavier holiday peak periods. Timing plans developed and implemented consisted of AM off-peak, midday peak, and PM off-peak periods on both typical and holiday weekends.

The PASS project involved the completion of the following major tasks: collect turning movement counts, including vehicular, pedestrian, and bicycle counts; conduct travel time surveys; review collision history; coordination plans for the analysis periods; implement and fine-tune the recommended timings; conduct the "before" and "after" travel

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## PROJECT OVERVIEW (CONTINUED)

time surveys to assess the performance of the new plans; and peer-review of nine intersections on Ygnacio Valley Road.

The field fine-tuning was conducted during both the holiday weekend and typical weekend periods and minor adjustments were made to the offsets and splits based on the observed traffic conditions.

## BENEFITS TO VARIOUS MODES



**BENEFITS TO BICYCLISTS:** To improve safety, the minimum green intervals were reviewed for bicyclists on the corridors. Changes to minimum green intervals were made at 11 intersections.



**BENEFITS TO PEDESTRIANS:** The pedestrian timings were reviewed based on the 2012 California MUTCD to enhance safety and changes were recommended at three project intersections.



**BENEFITS TO TRAFFIC SAFETY:** A review of intersection-level collisions along the corridors was conducted to identify any collision patterns that may be corrected through signal timing adjustments. No specific timing changes were recommended as a result of the collision review.

### Project Costs

Consultant Costs (Basic Services/ Plans)	\$87,500
Consultant Costs (Additional Plans, TSP, IM Flush Plans, etc.)	\$16,210
Other Project Costs (GPS Clocks, Communications equipment, etc.)	\$0
Agency Staff Costs (Estimate)	\$21,875
<b>Total Costs</b>	<b>\$125,585</b>

### Project Benefits

Measures	First Year		Lifetime (5 Years)	
	Savings	Monetized Savings	Savings	Monetized Savings
Travel Time Savings	12,888 hrs.	\$251,508	34,572 hrs.	\$674,683
Fuel Consumption Savings	25,606 gal.	\$98,817	68,689 gal.	\$265,081
ROG Emissions Reduction	0.101 tons	\$127	0.271 tons	\$341
NOx Emissions Reduction	0.060 tons	\$1,084	0.162 tons	\$2,909
PM2.5 Emissions Reduction	0.003 tons	\$940	0.008 tons	\$2,522
CO Emissions Reduction	0.685 tons	\$53	1.839 tons	\$142
<b>Total Lifetime Benefits</b>				<b>\$945,678</b>

### Overall Project Benefits

	Auto
Average Decrease in Travel Time	14%
Average Speed Increase	23%
Average Fuel Savings	9%
Average Reduction in Signal Delay	15%
Average Reduction in Number of Stops	29%
<b>Overall Benefit-Cost Ratio</b>	<b>8:1</b>

## PROJECT BENEFITS SUMMARY



**Average Reduction in Auto Signal Delay: 15%**

**Average Reduction in Number of Stops: 29%**

**Auto Fuel Consumption Savings: 9% or 68,689 gallons**

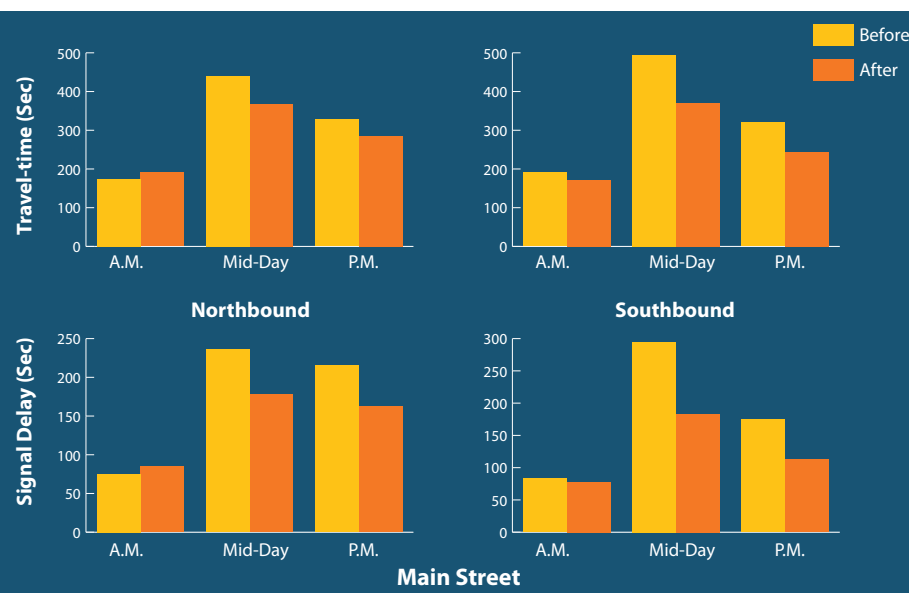


**Total Emissions Reduced (ROG, NOx, PM2.5, CO): 2.28 tons**

**Auto Travel Time Savings: 14% or 34,572 hours**



**Overall Project Benefit-cost Ratio = 8:1**



### For more info, please contact:

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